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PHARMACOGNOSTIC AND PHYTOCHEMICAL INVESTIGATION OF DIFFERENT SOLVENT EXTRACT OF *KIGELIA PINNATA* LINN

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Keywords:

Balam Kheera, Napthaquinone, Phytoconstituents, Anticancer

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ABSTRACT: *Kigelia pinnata* Linn (Balam Kheera) Belongs to the family Bignoniace and commonly called as "Sausage tree" because of its hugs fruits. To study pharmacognosy and phytochemistry of *kigelia pinnata* and also studying Ayurveda, Siddha, Unani system of medicine. *Kigelia Africana* (lam) Benth. It is one of those tree species that have been heavily exploited for their medicinal, religious and cultural values. These species can reach 20 meters in height, sausage like in appearance with long cord-like talks. The species is native in Africa. Preliminary phytochemical screening performed on chloroform, petroleum ether, methanol, ethanol showed the presence of alkaloids, glycosides, flavonoids, steroids and tannins. The chemical constituent present in *Kigelia pinnata* is Naphthoquinone lapachol, pinnatal, isopinnatal, steroid is naphthoquinone, saponin, tannins, flavonoids. The collection of *Kigelia pinnata* leaves, fruits, stem, flowers etc. To study pharmacognostic characteristics of *Kigelia pinnata* leaves. The performance of the phytochemical screening of *Kigelia pinnata* leaves based on their physiochemical studies. To isolate pure phytoconstituent from extract by thin layer chromatography and elucidate structure of compound by spectral analysis. The natural products obtained from plant shave potential in the search for new and selective agents for the treatment of important disease. This plant has traditional use which include anticancer, antimicrobial, antioxidant, anti-inflammatory and antimalarial properties. To study HPTLC fingerprint profile of *K. pinnata* leaves for its botanical identification and standardization. It was analyzed through the relevant physiochemical parameters and qualitative tests for various functional groups.

INTRODUCTION: Only because of the crucial role that the plant world plays in supporting human life has man been able to survive on Earth. Since they were readily available and reason ably priced, plants have been utilized as medicine for ages. In fact, they served as the foundation for the earliest medical systems in human history.

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To their great c red, it, the Indian people have been endowed with a greater variety of medicinal plants than the indigenous people of any other nation on the planet. Since, ancient times, natural items have been a significant source of pharmaceuticals; currently, almost half of all effective medications come from natural sources.

There is a wealth of documented and conventionally used knowledge about herbal medicine in India. Known as the botanical garden of the globe, this nation is arguably the world's largest producer of medicinal plants. Over 6000 plants are thought to be utilized in traditional, folk,

and herbal medicine in India, which accounts for over 75% of the third world's medical needs.

Siddha System of Medicine: One of the Oldest Indian medical system, siddha is regarded as the mother tongue of the ancient Tamils and Dravidians of southern India. According to Hindu belief, perfected masters who have transcended the ahamkara, subdued their minds to be subservient to their awareness, and changed their bodies which were primarily composed of dence Rajotama guns into a different kind of bodies dominated by sattva are reffered to as siddha, which means established truth or"one who is accomplished" [1]. Usually, it takes a lifetime of consistent meditation to achieve this. The siddha system of Medicine predominated in the southern Indian peninsula and is as old as humanity. There are some people who claim that Ayurveda is the oldest medicinal system, but from the research done with the help of available historical data, it is evident that Siddha system of medicine is much older than even Ayurveda. Not only is this medical system the oldest, this is a medical system with lots of specialities; its specialities far outweigh the Ayurvedic medicine [2].

Ayurveda System of Medicine: Ayurveda (means the "science of life") the origin of most forms of natural and alternative medicine has its mention in one of the oldest (about 6,000 years) philosophical texts of the world, the Rig Veda. Ayurvedic medicine is a system of traditional medicine native to the Indian subcontinent and practiced in other parts of the world as a form of alternative medicine. In Sanskrit, the word Ayurveda consists of the words Ayush, meaning "longevity", and Veda, meaning "related to knowledge" or" science" [3]. The history of Ayurveda can be dated back to the Vedic ages. It was Charaka and Susrutha who played a major role in evolving Ayurveda into a predominant treatment therapy. Ayurveda advocates that every living and non-living being has five basic elements (Pancha Maha Bhoothas) in them namely earth, water, fire, air and earth. Akasha provides space and scope for developmental changes and ensures growth. Vayu helps in shaping physical mass into organs, limbs, constituents or tissues etc [4].

Unani System of Medicine: Unani System of medicine is one of the oldest traditional systems of medicine which has strived through ages in the prevention and treatment of various medical conditions. Unani is the Arabic word for Ionian, or Greek for which popularly Unani medicine is also known as Unani Tibb or Graeco-Arab Medicine, as Arabs have developed and refined it through systematic experiment prominently by Avicenna. Unani System of medicine is one of the oldest traditional systems of medicine which has strived through ages in the prevention and treatment of various medical conditions. Unani is the Arabic word for Ionian, or Greek for which popularly Unani medicine is also known as Unani Tibb or Graeco-Arab Medicine, as Arabs have developed and refined it through systematic experiment prominently by Avicenna [5].

Phytochemistry: Phytochemicals (from the Greek word phyto, meaning plant) are biologically active, naturally occurring chemical compounds found in plants, which provide health benefits for humans further than those attributed to macronutrients and micronutrients. They protect plants from disease and damage and contribute to the plant's color, aroma and flavour. In general, plant chemicals that protect plant cells from environmental hazards such as pollution, stress, drought, UV exposure and pathogenic attack are called phytochemicals [6]. Recently, it is clearly known that they have roles in the protection of human health, when their dietary intake is significant. More than 4,000 phytochemicals have been catalogued and are classified by protective function, physical characteristics and chemical characteristics.

In wide-ranging dietary phytochemicals are found in fruits, vegetables, legumes, whole grains, nuts, seeds, fungi, herbs and spices. Broccoli, cabbage, carrots, onions, garlic, whole wheat bread, tomatoes, grapes, cherries, strawberries, raspberries, beans, legumes, and soy foods are common sources. Phytochemicals accumulate in different parts of the plants, such as in the roots, stems, leaves, flowers, fruits or seeds. Many phytochemicals, particularly the pigment molecules, are often concentrated in the outer layers of the various plant tissues. Levels vary from plant to plant depending upon the variety, processing, cooking and growing conditions. Phytochemicals are also available in supplementary

forms, but evidence is lacking that they provide the same health benefits as dietary phytochemicals [7].

Herbal Medicines: Phytopharmaceuticals, phytomedicine, and phytomedicinal is herbal preparations made from various plant parts. They are available in various dosage forms and formulations, such as tablets, capsules, elixir, powders, extracts, and more. 369 results are returned from a global search using the keywords "herbal medicine" typed into the search template's global field. Natural goods are becoming a crucial component of the healthcare system. The rapid rise in popularity of traditional medicine in Asia, Europe, and the United Stateshasled to significant expansion and advancement in the global trade in pharmaceuticals. The market for herbal drugs is currently expanding at a rate of 20–30% per year. For their medical needs, 70–80% of people in Latin America use traditional medicine [8].

The global supply of herbal medicines has given India great chance to search for medicinal lead chemicals from our traditional Ayurvedic system that may be used to create new drugs. According to epidemiological data, nutrition has little bearing on human health or the management of some chronic illnesses, such as cancer. In recent years, complementary medicine has grown in popularity. Natural products make up more than half of all modern medications, and they are crucial to the pharmaceutical industry's drug research initiatives. Dietary measures and traditional plant remedies as suggested by Ayurvedic and other indigenous systems of medicine are employed regularly in India [9].

Authentication of Plant: Authentication is the act of verifying or proving the claimed identity. Medicinal plants have been used worldwide for centuries to maintain health and to treat diseases, more so chronic diseases. However, adulteration and use of spurious materials as substitutes have become a major concern for users and industry for reasons of safety and efficacy. Morphological, anatomical, chemical and DNA markers solve the problem by differentiating the genuine material from the adulterants, substitutes and spurious drugs. Commonly, the methods used to assess the authenticity of herbs depend on morphological and analogical analysis, organoleptic characters, deoxyribonucleic acid (DNA)-based, chemical fingerprinting and many others [10]. Introduction to Medicinal plants have become extremely popular in the United States as botanical supplements, herbal medicines and sources of lead compounds for pharmaceutical development. It is estimated that in 1997 Americans used or consumed $5.1 billion dollars' worth of herbal medicines. For the protection of consumers, authentication of medicinal plants is a critical issue. Ideally, authentication should occur from the harvesting of the plant material to the final product. Unfortunately, there is no single or superior method to assure 100 percent authentication during the entire process, but the goal can be achieved through the application of a variety of different methodologies.

The whole process starts with good voucher specimens that act as reference material and to prove chain of custody. Macroscopic and microscopic examinations can be used as rapid and inexpensive identification techniques. Chemical analysis is by far the best method for the detection of contaminants and can be an excellent method for plant identification. Each of these methodologies has limitations and more analytical methods are needed to assist in the authentication process. Molecular biology offers an assortment of techniques that can be very useful for authentication of medicinal plants [11]. This review covers various aspects of authentication methods, with special emphasis on molecular biology techniques. Herbal products are marketed and used around the globe for their claimed or expected health benefits, but their increasing demand has resulted in a proportionally increase of their accidental contamination or intentional adulteration.

Pharmacognosy: The study of natural products' chemical, physical, and biological characteristics as well as their potential for therapeutic or health benefits is known as pharmacognosy. It is propelled by a remarkable volume of anecdotal evidence, forward-thinking investigation advancements, and a track record of effectively creating medication prospects. Despite being intrinsically linked to the domains of botany and plant chemistry, Pharmacognosy is entwined with numerous other subjects, such as spectrometry, genetics,

pharmacology, enzymology, molecular biology, and biotechnology. Because of their perceived improved safety profile, potential synergistic effects from multiple molecular constituents, and the structural and chemical diversity of "lead compounds," which serve as templates for drug development with enhanced potency, selectivity, and safety, it is strategically important to develop pharmaceutical compounds from natural sources (plants, animals, and microbes) [12]. *Kigelia pinnata* is an African tree, traditionally used in Africa for its medicinal value and has been widely used to cure many human ailments. Few recent reports on *K. pinnata* tree indicated that several parts of the tree have potential anticancer activity. Medicinal plants have always been used to cure many human diseases, and many bioactive phytochemicals have been isolated, identified and studied for its bioactive potential [13].

Medicinal plants serve as an alternative source of drugs for the treatment for wide variety of diseases, bacterial infection, cancer and other human diseases. About 80% of the world population still depend on medicinal plants for their medicine. *Kigelia pinnata* also known as *Kigelia africana* is one such medicinal plant, well known for its ability in curing cancer, malaria, skin ailments, sickle cell anaemia and others. The biological importance of *K. pinnata* has been reported in many of the recent studies *Kigelia Pinnata* Linn. (Balam Kheera) belongs to the family of Bignoniaceae and commonly called the "Sausage" tree because of its hug's fruits. This species can reach 20 meters in height, Sausage like in appearance with long cord - like stalks. It is also known as Balam Kheera in Hindi. This plant is commonly found throughout in western and southern India and a few species in the Himalayas. It is a large evergreen glabrous tree measuring 8-10 min height, stem, trunk straight with branches in all direction. Bark is thick black. Leaves opposite, crowded near the ends of branches, compound, with 3-5 pairs of leaflets plus a terminal leaflet oblong up to 6-10 cm, roughly hairy on both surfaces [14].

Synonym: *Bignonia africana* Lam, *Tecoma africana* (Lam.) G. Don, *Crescentia pinnata* Jacq, *Kigelia abyssinia* A. Rich, *Kigelia aethiopica* Decne, *Kigelia aethiopum*, (Fenzl) Dandy

Biological Source: *Kigelia pinnata*, also known as the Sausage tree, is a tropical plant species native to Africa and belongs to the family Bignoniaceae.

Geographical Source: Native to tropical Africa

Chemical Constituent: Naphthoquinone lapachol, Dihydroisocoumarinkigelin, Iridoids Naphtha-quinoidskigelinone, pinnatal and, isopinnatal and sterols stigmasterol and beta- Sitosterol, naphthoquinone; saponins, tannins, flavonoids.

Botanical Profile:

FIG. 1: HERBAL PLANT - *KIGELIA PINNATA* LINN

TABLE 1: VERNACULAR NAMES [15]

Tamil	Yannai Pudukan
English	Sausage Tree
Hindi	Balam Khira
Malayalam	Shiva Kundalam
Telugu	Enuga Thondamu
Marathi	Jahr Phanus
Gujrati	Sausage Tree

TABLE 2: TAXONOMICAL CLASSIFICATION [16]

Kingdom	Plantae-Plants
Division	Magnoliophyta-Flowering Plants
Class	Magnoliopsida-Dicotyledons
Order	Scrophulariales
Family	Bignoniaceae
Genus	Kigelia DC- Sausage Tree
Species	*Kigelia pinnata* (Lam) Benth – Sausage Tree

Habitat: This herbal plant has grown in tropical Africa in open woodlands, riverbanks, flood pains and savannas. They are majorly located in sub-Saharan central Africa to South Africa. The need for growing plants should be tropically and seasonally dry and alluvial soil in areas that flood periodically. They can be protected from herbivores for part of the year.

Botanical Description: *Kigelia pinnata Linn*. (Balam Kheera) belongs to the family of Bignoniaceae and commonly called the "Sausage" tree because of its hug's fruits. This species can reach 20 meters in height, Sausage like in appearance with long cord -like stalks. It is also known as Balam Kheera in Hindi. This plant is commonly found throughout in western and southern India and a few species in the Himalayas. It is a large evergreen glabrous tree measuring 8-10 min height, stem, trunk straight with branches in all direction [17].

Morphology:

Leaves: Leaves opposite, crowded near the ends of branches, compound, with 3-5 pairs of leaflets plus a terminal leaflet oblong up to 6-10 cm, roughly hairy on both surfaces.

Flowers: Flowers colour in dark maroon with heavy yellow veining in the outside. The cup shape is asymmetrical, unpleasant, and smelling.

Fruits: Fruits, Sausage shaped up to 1m- 18cm grayish brown heavily dotted with lenticels, weighing up to 12 kg. Flowering - August to October and fruiting from December to June.

Stems: The stems or peduncles of *Kigelia pinnata* can be up to 7.5 m (25ft) long.

Medicinal Uses:

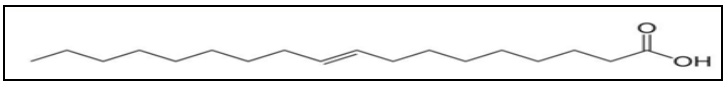
1. Used as Antimicrobial Agent
2. They show Antioxidant properties
3. Used to reduce inflammation
4. Show the Anti-Malarial Properties
5. It is also widely applied in the treatment of Genital Infections
6. Gynecological Disorders
7. Renal Ailments
8. Epilepsy Rheumatism
9. Sickle - Cell Anaemia
10. Skin Complaint, Body Weakness, Leprosy, Worm Infestation and Kidney Stones.

Chemical Constituent:

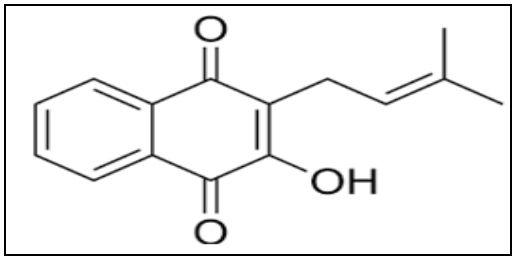
TABLE 3: CHEMICAL CONSTITUENT

Plant Parts	Chemical Constituent
Plant	The occurrence of many secondary metabolites including iridoids, naphthoquinone; saponins, tannins, flavonoids and several others and said to be an important source of bioactive compounds
Roots	Naphthoquinonelapachol, Dihydroisocoumarinkigelin, lapachol and sterols and the presence of iridoid glycosides
Barks	Naphthoquinone lapachol, Dihydroisocoumarinkigelin, Iridoids Naphthaquinoidskigelinone, pinnatal and, isopinnatal and sterols stigmasterol and beta-Sitosterol Sitosterol
Leaves	Flavonoids- 6-hydroxyluteolin-7-alpha-glucoside and luteolin
Fruits	Flavonoids- 6-hydroxyluteolin-7-alpha-glucoside and luteolin, Phenylpropanoid and Phenylethanoid derivatives, Iridoids

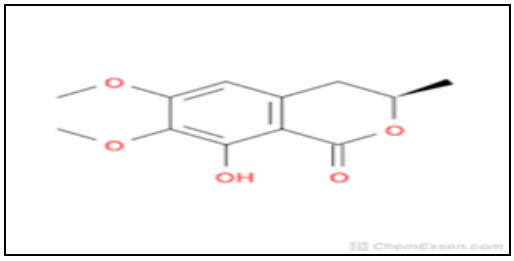
Chemical Structure:



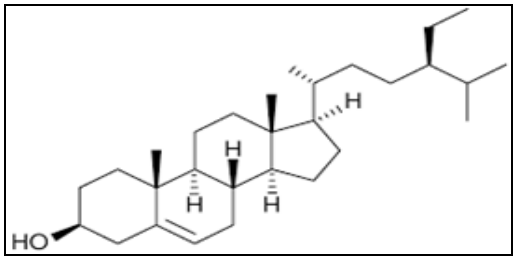
ELAIDIC ACID



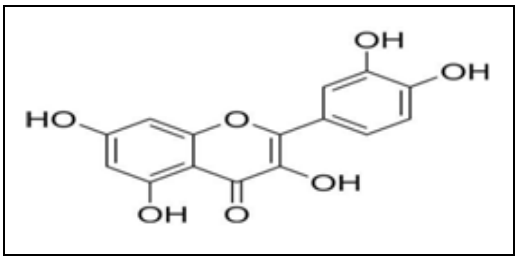
LAPACHOL



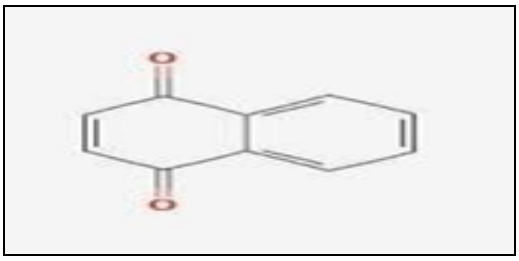
KIGELIN



SISTOSTEROL



FLAVONOID



NAPHTHOQUINONE

FIG. 2: CHEMICAL STRUCTURE

MATERIALS AND METHODS:

Plant Material:

Collection and Authentication of Plant:

Collection: The Leaves of plant *Kigelia Pinnata* belonging to the family Bignoniaceae were collected from Srirampur region tal. Srirampur dist. A. Nager. The leaves were dried under shade away from direct sunlight. The dried leaves were cleaned and coarsely powdered in grinder and powder material was passed through mesh 120 mesh to remove fine powder and coarse powder was used for extraction.

Authentication: Authenticated by Dr. N. V. Malpure of SSGM College Kopergaon, Ahilyanager, through comparing morphological character.

Extraction of *Kigelia pinnata:*

Soxhlet Extraction Method: Fresh, mature, healthy leaves from fully grown *Kigelia pinnata* Linn. Plants were collected and identified. The leaves where air dried in the shade and then ground into a fine powder using a mixer grinder. Approximately 250 gm of powdered material were subjected to extraction using a Soxhlet apparatus within each solvent. Solvent like chloroform, methanol, petroleum ether, ethanol etc. The extracts were filtered through Whatman no 1 filter paper and the resulting aqueous chloroform, methanol, ethanol, petroleum ether filtrates were concentrated to dryness using rotary evaporated to remove the solvents and dry in a shade.

FIG. 3: SOXHLET EXTRACTION APPARATUS

Thin Layer Chromatography: TLC is a chromatography technique used to separate mixture. Thin layer chromatography is performed on a sheet of glass, plastic or aluminium foil. which is coated with thin layer of adsorbent material. Usually silica gel, aluminium oxide, cellulose. (Blotter paper). This layer of adsorbent is known as stationary phase. After the sample has been applied on the plate, a solvent for or solvent mixture known as a mobile phase is drawn up the plate via capillary action. Because different analytes ascend the TLC plate at different plate, Separation is achieved.

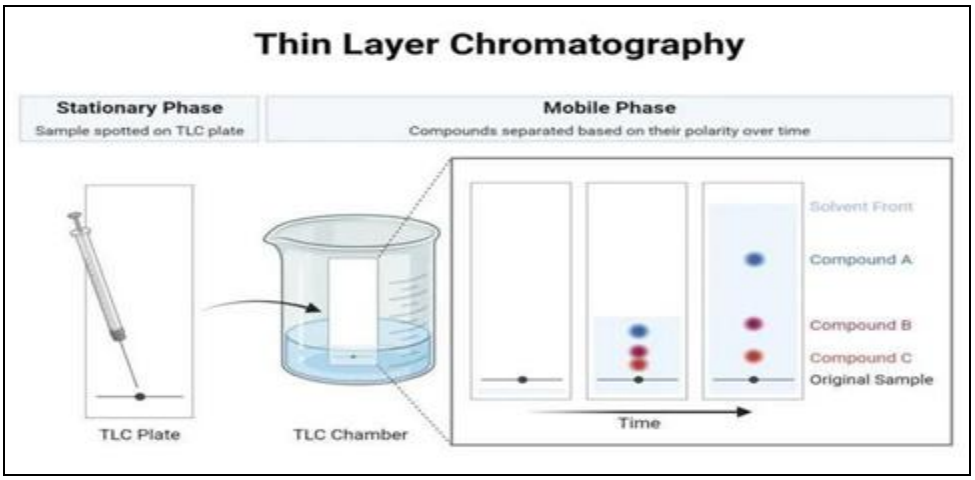


FIG. 4: THIN LAYER CHROMATOGRAPHY

Procedure: The stationary phase applied on to the plate uniformly and then allowed to dry and stabilise. Those days, however, readymade plates are preferred. Then with a pencil a thin mark is made at the bottom of the plate to apply the same spots. Then sample solution applied on the spots. Mark on the line in equal distance. The mobile phase is poured into the TLC chamber to a levelled few centimetres above the chamber bottom. A moistened filter paper in mobile phase is placed on the inner wall of the chamber to maintain equal humidity (and also there by avoids edge effect this way). Now the plate prepared with samples spotting is placed in TLC chamber so that the side of the plate with sample line is facing the mobile phase. Then the chamber is closed with a liquid. Then observe the result.

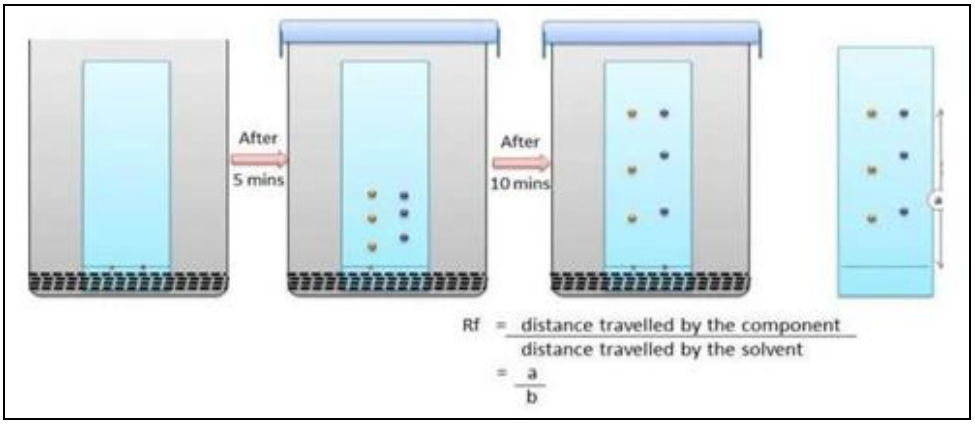


FIG. 5: THIN LAYER CHROMATOGRAPHY

RESULT AND DISCUSSION:

Pharmacognostic Evaluation: In Pharmacognostic study of leaves of *Kigelia Pinnata Linn*. macroscopic, microscopy, powder characteristics and physicochemical parameters were studied.

Authentication of Plant:

Specimen name: *Kigelia africana* (Lam) Benth plant authentication voucher specimen number: BSI/WRC/IDEN.CER. /2024/417 dated at 05/12/2024

Morphological and Organoleptic Character:

TABLE 4: MICROSCOPICAL CHART

Sr. no.	Parameters	Features
1	Color	Green
2	Odor	Characteristics
3	Taste	Bitter
4	Size	50 – 60 cm
5	Shape	large, simple

Microscopic Study of Leaves Part:

Upper Epidermis: Unicellular or multicellular trichomes, thick walled, cutinized cell, thin waxy Layer, rectangular and irregular shape cells.

Mesophyll: Located in upper and lower epidermis, large central vacuoles, chloroplast reach cells.

Palisade: located below the upper epidermis, columnar cell (1-2 layer thick), cell length (30-50 µm).

Spongy Parenchyma: Located below the palisade tissue, irregularly shaped cells (4-6 layer thick).

Covering Trichomes: Unicellular trichomes- Simple, single- celled hairs. Multicellular trichomes – Multiple cell hair.

Vascular Bundle: collateral vascular bundle, open vascular Bundle.

Xylem: Lignified

Phloem: Non-lignified

Palisade parenchyma: Elongated compactly arranged.

Phytochemical Study: Qualitative analysis was done to detect various chemical constituents by performing tests for alkaloids, glycosides, tannins and phenolic compound, flavonoids, proteins, steroids and sterols.

Preliminary Phytochemical Screening of Extracts:

TABLE 5: PRELIMINARY PHYTOCHEMICAL TEST OBSERVATION

Tests	Petroleum ether extracts	Chloroform extracts	Methanol extracts
Test for Steroids:			
Salkowaski test	-	-	+
Liebermann- Burchant test	-	-	+
Test for Glycoside			
Brontragers test	-	-	-
Modified Brontragers test	-	-	-
Keller-killani test	-	-	-
Test for Carbohydrate			
Molisch's test	-	-	+
Barfoeds test	-	-	+
Benedicts test	-	-	+
Test for Proteins			
Millions test	-	-	+
Xanthoproteic test	-	-	+
Biuret test	-	-	+
Ninhydrin test	-	-	+
Test for Tannins			
Ferric chloride test	-	-	+
Dilute nitric acid test	-	-	+
Test for Flavonoids			
Shinoda test	+	-	+
Lead acetate test	+	-	+
Test for Saponin			
Foam test	-	-	+
Hemolysis test	-	-	+
Test for Alkaloid			
Dragandroffs test	-	+	+
Mayer's test	-	+	+
Hager's test	-	+	+
Wagner test	-	+	+

Note: '+ve' used for positive test and '-ve' used for negative test the results of preliminary phytochemical study shown in Table No. 9 presence of Alkaloids, Flavoniods, Tannins, Glycosides, Proteins, Carbohydrate and Steroids.

Thin Layer Chromatography: Thin layer chromatography technique is used for separation, isolation and identification of constituents presents in the Pet-ether, Ethanol, Chloroform, and Methanol extract.

TABLE 4: TLC FOR FLAVONOID

Extract	Solvent system	Detection	Colour of spot	Rf value
Pet-ether			Yellowish green	0.23
Chloroform	Toluene: Ethyl acetate: Formic acid: Glacial acetic Acid 20:45:20:5	Anisaldehyde-sulphuric acid		0.30
Methanol				0.74

TABLE 6: TLC FOR STEROIDS

Extract	Solvent system	Detection	Colour of spot	Rf value
Pet. Ether	Toluene: Ethyl acetate	Vanillin sulpuric acid	Pink-violet	0.42
Chloroform				0.56
Methanol				0.72

TABLE 7: TLC FOR TANNIN

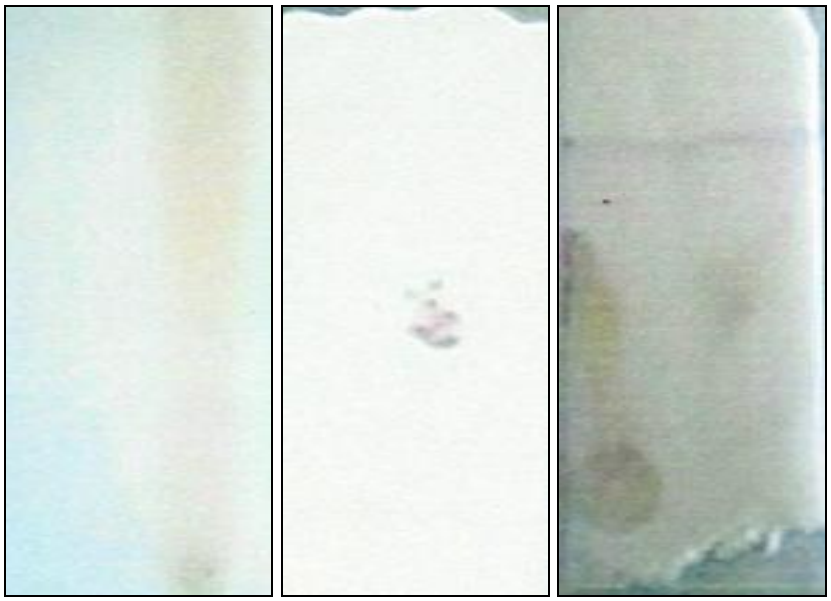
Extract	Solvent system	Detection	Color of spot	Rf value
Pet-ether		Fecl3 Solution	Black	0.64
Chloroform	Ethyl acetate: Formic acid: GAA: water 100:11:11:26			0.64
Methanol				0.65

TABLE 8: TLC FOR ALKALOID

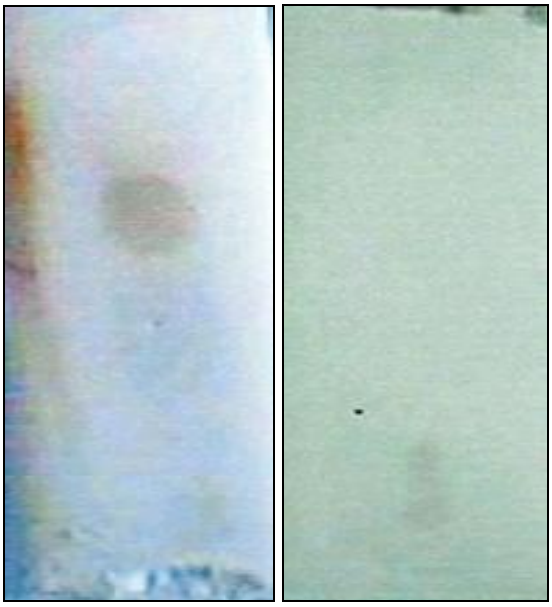
Extract	Solvent system	Detection	Color of spot	Rf value
Pet-ether	Tolune:Ethyl acetate:diethylamine 70:20:10	10% ethanolic sulphuric acid	Black	0.23
Chloroform				0.65
Methanol				0.74

TABLE 9: TLC FOR GLYCOLOIDES

Extract	Solvent system	Detection	Color of spot	Rf value
Pet-ether	Benzene: GAA: Methanol	Anisaldehyde sulphuric acid	Orange	0.62
Chloroform				0.57
Methanol				0.75



TLC OF FLAVONOID **TLC OF STEROIDS** **TLC OF TANNINS**



TLC OF GLYCOSIDE TLC OF ALKALOIDS

FIG. 6: THIN LAYER CHROMATOGRAPHY OF METHANOLIC EXTRACT

Thin layer chromatography is an important analytical tool in the separation, identification and estimation of different classes of natural products. All extracts of leaves were subjected for TLC with suitable solvents system for better separation of the components. In TLC, with showed effective separation effective separation and presence of steroidal nucleus, alkaloids, flavonoids, Glycoside, tannins compounds. Ethyl acetate: formic acid: glacial acetic acid: water (100:11:11:26) was used as solvents system for characterization of Tannins. Benzene: glacial acetic acid: methanol (20:20:60) for sugars. Toluene: ethyl Acetate: Diethyl amine (70:20:10) Chloroform: Methanol: water (65:35:10) for Glycosides. Toluene: Ethyl acetic: glacial acetic acid: water (100:11:11:26) for flavonoids.

The Rf value for Flavonoids was found, for (0.74), for pet ether (0.23). Rf value for steroids was found for Methanol extract (0.72). RF value for alkaloids was found for (0.65) and for methanol (0.74). Rf value of glycoside was found for methanol (0.75) for pet ether (0.62), and Rf value for Chloroform (0.57).

CONCLUSION: Leaves of *Kigelia pinnata* L were studied for pharmacognostic and phytochemical evaluations. In preliminary phytochemical test the leaves extract showed presence of phytosterols, alkaloids, glycosides, flavonoids, saponins, tannins, and phenolic compound. Thin Layer chromatography of Methanol extract was carried out.

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